

REMARKS

This Substitute Amendment is prepared in response to the Office Interview between the Examiner and Applicant's undersigned attorney held on 16 September 2009 and the Office action mailed on 9 March 2009 (Paper No. 20090304).

This Substitute Amendment substitutes the Amendment filed on 8 June 2009 considering the Examiner's opinion discussion during the Office Interview.

Listing of The Claims

Pursuant to 37 CFR §121(c), the claim listing, including the text of the claims, will serve to replace all prior versions of the claims, in the application.

Status of The Claims

Claims 1, 4-15, 19-27, 31- 37 are pending in the application.

Amendment of The Claims

Claims 1, 14, and 27 are amended.

Election/Restrictions

The restriction requirement was withdrawn. Accordingly Claims 9-11, 24, 25, 36, and 37 are no longer withdrawn from consideration.

The Applicant acknowledged that the Examiner withdrew the final rejection of 16 December 2008 because the Examiner found that the Applicant's arguments filed on 12 February 2009 were persuasive.

Issues Raised by Paper No. 20090304**Claim Rejections - 35 U.S.C. §103(a)**

I. Claims 1,8, 9 and 11 are rejected under 35 U.S.C. §103(a) as being unpatentable over

Osamu et al., (JP 2000-208130, refer to IPDL JPO machine translation for citation) in view of Yoshimura et al. (JP 06-096793, refer to IPDL JPO machine translation for citation)

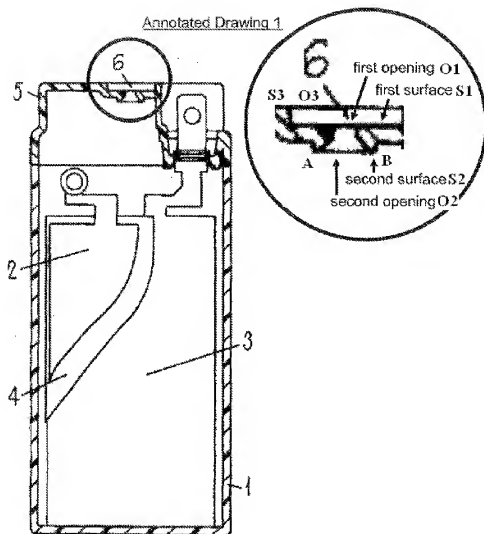
Claims 1 and 8

The Examiner proposed a combination of Osamu '130 and Yoshimura '793 in order to reject the Applicant's claims 1 and 8.

The Applicant during the interview has pointed out the difference between the Applicant's structure of the electrolytic solution inlet and the Examiner's proposed Yoshimura's injection hole 6. In order to more clearly define the Applicant's cap plate having the novel electrolytic solution inlet, the Applicant amends claim 1 to define "a cap plate adapted to seal the can, said cap plate being perforated by an electrolytic solution inlet extending from a smaller opening on a first major surface of the cap plate facing an exterior of the secondary battery and through the cap plate to a larger opening of the electrolytic solution inlet on a second major surface of the cap plate facing the electrode unit, on opposite sides of the cap plate."

The Applicant defines that the "electrolytic solution inlet" perforates the "cap plate" by "extending from a smaller opening on a first major surface of the cap plate facing an exterior of the secondary battery and through the cap plate to a larger opening of the electrolytic solution inlet on a second major surface of the cap plate facing the electrode unit." The Applicant will discuss the structure difference between the Applicant's "electrolytic solution inlet" and Yoshimura's injection hole 6.

The Examiner on page 6 of Paper No. 20090304 interprets surface S1 of lid 5 as the Applicant's first major surface of the cap plate facing an exterior of the secondary battery, and interprets surface S2 of lid 5 as the Applicant's second major surface of the cap plate facing an exterior of the secondary battery. The Applicant quotes the Examiner's annotated drawing 1 of page 6 of Paper No. 20090304 as follows.

Annotated Drawing 1

First, the Examiner should note that the Applicant's electrolytic solution inlet perforates from two major surfaces of the cap plate, and the two major surfaces are respectively disposed on opposite sides of the cap plate. The Applicant's first and second major surfaces refer to the two largest opposite flat major surfaces.

The Examiner should have noted that Yoshimura's injection hole 6 as a whole, extends from the largest opening O3 disposed on a major surface S3 of lid 5 facing an exterior of the battery, and through the smallest opening O1 disposed on a surface S1 of lid 5 and then to a medium opening O2 disposed on a surface S2 of lid 5 facing an interior of the battery. The Examiner should note Yoshimura's surfaces S1 and S2 may not be defined as major surfaces, because surfaces S1 and S2 are not the two largest opposite flat major surfaces of lid 5.

As the Applicant has explained during the interview, Yoshimura's first opening S1 is merely a throat of injection hole 6 and may not be compared with the Applicant's smaller opening disposed on a first major surface of the cap plate. If the throat of Yoshimura's throat of injection hole 6 may be considered as an opening disposed on a first major surface of the cap plate, infinite number of openings may be defined.

In the broadest interpretation, Yoshimura's injection hole 6 perforates lid 5 through **three** openings respectively disposed on **three** surfaces of lid 5, while the Applicant's electrolytic solution inlet as claimed perforates the cap plate through **two** openings respectively disposed on **two** opposite major surfaces of the cap plate.

Therefore, Yoshimura's injection hole 6 has a different structure compared to the Applicant's electrolytic solution inlet.

Second, the Examiner's proposed second surface S2 does not actually exist because the Examiner's proposed second opening S2 is disposed at two discrete tips A and B. Even when there is surfaces existing at the tips A and B, such surfaces at tips A and B may not be read as the Applicant's "second major surface" because the surfaces at

tips A and B are not the largest surfaces of lid 5.

Third, the Examiner's interpretation fails to compare the whole Yoshimura's injection hole 6 with the Applicant's electrolytic solution inlet, however, compares only a partial of Yoshimura's injection hole 6 with the Applicant's electrolytic solution inlet. Therefore, the Examiner's comparison is not proper.

The Examiner should note that the Applicant's smaller and larger openings are respectively disposed **on** the first and second major surfaces of the cap plate.

Even though the Examiner compares only a partial of Yoshimura's injection hole 6 with the Applicant's electrolytic solution inlet as proposed on page 6 of Paper No. 20090304, Yoshimura's first opening O1 is disposed inside of instead of "on" the major surface of lid 5.

In accordance with Webster's Third New International Dictionary of the English Language Unabridged (2002), the word "on" may be used as "a function word to indicate position over and in contact with that which supports from beneath."

Yoshimura's first opening O1 is however disposed inside and beneath the major surface S3 of lid 5.

Consequently, Yoshimura's first opening O1 is not disposed on a major surface of lid 5.

Fourth, the Examiner on page 6 of Paper No. 20090304 asserted that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Yoshimura et al's electrolyte injection hole (6), because Yoshimura et al. teaches that this electrolyte injection hole (6) is the pouring-in mouth used for pouring the electrolyte into a battery case in order to promptly distribute the electrolyte between the electrodes and battery case." The Applicant disagrees with the Examiner's assertion because Yoshimura '793's motivation of promptly distributing the electrolyte within the

battery case does not lead one skilled in the art to modify Osamu '130 by Yoshimura '793.

The Applicant submits that Yoshimura '793 provides a method of charging a polar plate of a battery after the electrolyte is poured into the can, in order to drive the gas out of a can of the battery. By the step of charging of the polar plate, the electrolyte will be evenly distributed within the can of the battery. (See Yoshimura '793's paragraph [0013]) In other words, the structure of Yoshimura '793's electrolyte injection hole 6 has nothing to do with the improvement of the distribution of the electrolyte in Yoshimura '793's invention. Therefore, after studying Yoshimura '793 and Osamu '130, one skilled in the art may use Yoshimura '793's step of charging of the polar plate of Osamu '130's battery after the electrolyte is poured into the can of Osamu '130's battery, however, would have no motivation to use Yoshimura '793's electrolyte injection hole 6 in Osamu '130's battery.

Fifth, Osamu '130 teaches away from the Applicant's injection inlet. Osamu '130 as shown in FIG. 2, clearly teaches injection hole 14 which has a smaller lower opening compared to the upper opening. The Applicant's injection inlet however, has a bigger lower opening compared to the upper opening as defined by claims 1 and 8.

Sixth, Osamu '130's plug 16 has a shape which fits well to injection hole 14. Even though Osamu '130's injection hole 14 is modified by Yoshimura '793's electrolyte injection hole 6, the Yoshimura '793's electrolyte injection hole 6 having slop sides would not be well stopped by Osamu '130's plug 16. Therefore, Osamu '130's injection hole 14 would not satisfy its intended purpose.

MPEP §2143.01 states that:

"If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification."

Therefore, the Examiner is respectively requested to withdraw the rejection to claims 1 and 8.

_____**Seventh**, the Examiner further cited Osamu '130's injection hole 14 which has a step structure and asserted that the combination of Osamu '130 and Yoshimura '793 teaches the Applicant's injection hole which has a stepped portion. The Applicant disagrees with the Examiner's assertion because Osamu '130 teaches away from the structure of the Applicant's injection hole.

As shown in Osamu '130's FIG. 2, injection hole 14 has a stepped portion where the lower opening is smaller compared to the upper opening. On the other hand, the Applicant's amended claim 1 defines a electrolytic solution inlet which has a bigger lower opening compared to the upper opening as shown in FIG. 8. Therefore, Osamu '130's injection hole 14 teaches away from the Applicant's invention as defined by the amended claim 1.

In summary, the Examiner's proposed combination is NOT proper, and thus the Examiner is requested to withdraw the rejection to the amended claim 1 and claim 8.

Claims 9 and 11

The Applicant notes that the Examiner's proposed combination does not contemplate the structure of the Applicant's injection inlet claimed. Consequently, claims 9 and 11 are not tendered obvious by the Examiner proposed combination.

II. Claims 4 through 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osamu et al., (JP 2000-208130) in view of Yoshimura et al., (JP 06-096793) as applied to claims 1, 8-9 and 11 above, and further in view of Uba (US 4,421,832).

The Applicant notes that the Examiner's proposed combination does not contemplate the structure of the Applicant's injection inlet claimed. Consequently,

claims 4 through 6 are not tendered obvious by the Examiner proposed combination.

III. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osamu et al., (JP 2000-208130) in view of Yoshimura et al., (JP 06-096793) and Uba (US 4,421,832) as applied to claims 1, 4-6, 8-9 and 11 above, and further in view of Planchat (US 4,735,630).

The Applicant notes that the Examiner's proposed combination does not contemplate the structure of the Applicant's injection inlet claimed. Consequently, claim 7 is not tendered obvious by the Examiner proposed combination.

IV. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osamu et al., (JP 2000-208130) in view of Yoshimura et al., (JP 06-096793), Uba (US 4,421,832) and Planchat (US 4,735,630) as applied to claims 1, 4-9 and 11 above, and further in view of Watari (JP 2001-313022, refer to IPDL JPO machine translation for citation).

The Applicant notes that the Examiner's proposed combination does not contemplate the structure of the Applicant's injection inlet claimed. Consequently, claim 10 is not tendered obvious by the Examiner proposed combination.

V. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osamu et al., (JP 2000-208130) in view of Yoshimura et al., (JP 06-096793), Uba (US 4,421,832), Planchat (US 4,735,630) and Watari (JP 2001-313022) as applied to claims 1, and 4-11 above, and further in view of Masumoto et al. (WO 2003/003485, refer to English equivalent US 2003/0180582 for cited information).

The Applicant notes that the Examiner's proposed combination does not contemplate the structure of the Applicant's injection inlet claimed. Consequently, claims 12 and 13 are not tendered obvious by the Examiner proposed combination.

VI. Claims 14, 23, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osamu et al., (JP 2000-208130) in view of Yoshimura et al., (JP 06-096793), Masumoto et al. (WO 2003/003485), applied to 1 and 4-13 above.

The Applicant notes that the Examiner's proposed combination does not contemplate the structure of the Applicant's injection inlet claimed. Consequently, claims 14, 23, 24 and 26 are not tendered obvious by the Examiner proposed combination.

VII. Claims 15, 27, 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osamu et al., (JP 2000-208130) in view of Yoshimura et al., (JP 06-096793), and Masumoto et al. (WO 2003/003485) as applied to 1, 4-14, 23-24 and 26 above, and further in view of Yamahira et al. (US 2002/0012829).

Claim 15

The Applicant notes that the Examiner's proposed combination does not contemplate the structure of the Applicant's injection inlet claimed. Consequently, claim 15 is not tendered obvious by the Examiner proposed combination.

Claim 27

The Examiner cited Yamahira '829 and asserted that Yamahira '829's gasket 43 is equivalent to the Applicant's insulating plate 43. The Applicant submits that, as shown in FIG. 12, Yamahira '829's solution injection port 45 has a step in order to improve mechanical strength. (See paragraph [0059]) Yamahira '829's gasket 43 is not wholly disposed on one surface of the plate having solution injection port 45, but is partially disposed on both sides of the plate having solution injection port 45. Therefore, the Examiner's proposed combination fails to teach the Applicant's "insulating plate arranged on a second surface of the cap plate."

The Applicant submits that Osamu '130 teaches away from the structure of the Applicant's injection hole.

As shown in Osamu '130's FIG. 2, injection hole 14 has a stepped portion where the lower opening is smaller compared to the upper opening. On the other hand, the Applicant's amended claim 27 defines a electrolytic solution inlet which has a bigger lower opening compared to the upper opening as shown in FIG. 8. Therefore, Osamu '130's injection hole 14 teaches away from the Applicant's invention as defined by the amended claim 1.

The Applicant's arguments rebutting the Examiner's rejections to claim 1 are applied to the Examiner's rejections to claim 27.

In summary, the amended claim 27 is not tendered obvious by the Examiner proposed combination.

Claims 35 and 36

The arguments against the Examiner's rejection to claims 8 and 9 are respectively applied to claims 35 and 36.

VIII. Claims 19-21 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osamu et al., (JP 2000-208130) in view of Yoshimura et al., (JP 06-096793), and Masumoto et al. (WO 2003/003485) and Yamahira et al. (US 2002/0012829) as applied to 1, 4-15, 23-24 26-27 and 35-36 above, and further in view of Uba (US 4,421,832).

The arguments against the Examiner's rejection to claims 4 through 6 are respectively applied to claims 19-21 and 31-33.

IX. Claims 22 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osamu et al., (JP 2000-208130) in view of Yoshimura et al., (JP 06-096793), Masumoto et al. (WO 2003/003485) and Yamahira et al. (US 2002/0012829) and Uba (US 4,421,832) as applied to 1, 4-15, 19-21, 23-24, 26-27, 31-33 and 35-36 above, and further in view of Planchat (US 4,735,630).

The arguments against the Examiner's rejection to claim 7 are respectively applied

to claims 22 and 34.

X. Claims 25 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osamu et al., (JP 2000-208130) in view of Yoshimura et al., (JP 06-096793), Masumoto et al. (WO 2003/003485), Yamahira et al. (US 2002/0012829), Uba (US 4,421,832) and Planchat (us 4,735,630) as applied to 1, 4-15, 19-24, 26-27 and 31-36 above, and further in view of Watari (JP 2001-313022).

The arguments against the Examiner's rejection to claim 10 are respectively applied to claims 25 and 37.

Claim Rejections - 35 U.S.C. §103(a)

I. Claims 1, 8, 9 and 11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Osamu et al., (JP 2000-208130, refer to IPDL JPO machine translation for citation) in view of Zupancic (US 4,592,970).

Claims 1 and 8

The Examiner proposed a combination of Osamu '130 and Zupancic '970 in order to reject the Applicant's claim 1. The Applicant disagrees with the Examiner's assertion for the following reasons. Furthermore, the Applicant incorporates the definitions of claim 9 into claim 1.

Firstly, the Examiner on pages 28 and 29 of Paper No. 20090304 asserted that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Zupancic's orifice (23) with the sloping sides with sealant disposed between the injection hole (14) and the plug (16) inserted in the injection hole (14), because Zupancic teaches that this orifice (23) with the sealant (27) disposed between the orifice (23) walls and the liner (29) inserted in the orifice (23) is critically important to retard creepage of electrolyte (Figure 1; column 9, lines 23-67)."

The Applicant disagrees with the Examiner's assertion, because Zupancic '970's sealant layer 27 for retarding creepage of the electrolyte does not lead one skilled in the

art to modify Osamu '130 by Zupancic '970.

The Applicant submits that Zupancic '970 uses sealant layer 27 in order to seal the gap between the wall defining orifice 23 and polytetrafluoroethylene liner 29. (See Zupancic '970's lines 48 through 51 of column 9) It is important for the Examiner to understand that Zupancic '970 uses the same opening disposed in cover 40 for both of electrolyte injection orifice 23 and vent orifice 25. In other words, Zupancic '970's sealant layer 27 is used only when the electrolyte injection inlet and the vent shares the same opening disposed on cover 40.

Osamu '130's invention however nowhere mentions that Zupancic '970's electrolyte injection orifice 23 and vent orifice 25 share the same opening, therefore, Zupancic '970's sealant layer 27 and electrolyte injection orifice 23 are not necessarily used in Osamu '130. Therefore, after studying Zupancic '970's and Osamu '130, one skilled in the art would have no motivation to use Zupancic '970's sealant layer 27 to Osamu '130's battery.

Additionally, the structure of Zupancic '970's electrolyte injection orifice 23 has nothing to do with retarding creepage of the electrolyte. Therefore, one skilled in the art would have no motivation to modify Osamu '130 by Zupancic '970's structure of electrolyte injection orifice 23.

Secondly, Osamu '130 teaches away from the Applicant's injection inlet. Osamu '130 as shown in FIG. 2, clearly teaches injection hole 14 which has a smaller lower opening compared to the upper opening. The Applicant's injection inlet however, has a bigger lower opening compared to the upper opening as defined by claims 1 and 8.

Thirdly, Osamu '130's plug 16 has a shape which fits well to injection hole 14. Even though Osamu '130's injection hole 14 is modified by Zupancic '970's orifice 23, the Zupancic '970's orifice 23 having slop sides would not be well stopped by Osamu '130's plug 16. Therefore, Osamu '130's injection hole 14 would not satisfy its intended

purpose.

MPEP §2143.01 states that:

“If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.”

Fourthly, the Examiner further cited Osamu '130's injection hole 14 which has a step structure and asserted that the combination of Osamu '130 and Zupancic '970's teaches the Applicant's injection hole which has a stepped portion. The Applicant disagrees with the Examiner's assertion, because Osamu '130 teaches away from the structure of the Applicant's injection hole.

As shown in Osamu '130's FIG. 2, injection hole 14 has a stepped portion where the lower opening is smaller compared to the upper opening. On the other hand, the Applicant's amended claim 1 defines a electrolytic solution inlet which has a bigger lower opening compared to the upper opening as shown in FIG. 8. Therefore, Osamu '130's injection hole 14 teaches away from the Applicant's invention as defined by claim 9.

In summary, the Examiner's proposed combination is NOT proper, and thus the Examiner is requested to withdraw the rejection to the amended claim 1 and claim 8.

Claims 9 and 11

The Applicant notes that the Examiner's proposed combination does not contemplate the structure of the Applicant's injection inlet claimed. Consequently, claims 9 and 11 are not tendered obvious by the Examiner proposed combination.

II. Claims 4 through 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osamu et al., (JP 2000-208130) in view of Zupancic (US 4,592,970) as applied to claims 1, 8-9 and 11 above, and further in view of Uba (US 4,421,832).

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IV. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osamu et al., (JP 2000-208130) in view of Zupancic (US 4,592,970), Uba (US 4,421,832) and Planchat (US 4,735,630) as applied to claims 1, 4-9 and 11 above, and further in view of Watari (JP 2001-313022, refer to IPDL JPO machine translation for citation).

The Applicant notes that the Examiner's proposed combination does not contemplate the structure of the Applicant's injection inlet claimed. Consequently, claim 10 is not tendered obvious by the Examiner proposed combination.

V. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osamu et al., (JP 2000-208130) in view of Zupancic (US 4,592,970), Uba (US 4,421,832), Planchat (US 4,735,630) and Watari (JP 2001-313022) as applied to claims 1, and 4- 11 above, and further in view of Masumoto et al., (WO 2003/003485, refer to English equivalent US 2003/0180582 for citation).

The Applicant notes that the Examiner's proposed combination does not contemplate the structure of the Applicant's injection inlet claimed. Consequently, claims 12 and 13 are not tendered obvious by the Examiner proposed combination.

VI. Claims 14, 23-24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osamu et al., (JP 2000-208130) in view of Zupancic (US 4,592,970) and Masumoto et al., (WO 2003/003485), as applied to 1 and 4-13 above.

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Claim 15

The Applicant notes that the Examiner's proposed combination does not contemplate the structure of the Applicant's injection inlet claimed. Consequently, claim 15 is not tendered obvious by the Examiner proposed combination.

Claim 27

The Examiner cited Yamahira '829 and asserted that Yamahira '829's gasket 43 is equivalent to the Applicant's insulating plate 43. The Applicant submits that, as shown in FIG. 12, solution injection port 45 has a step in order to improve mechanical strength. (See paragraph [0059]) Therefore, Yamahira '829's gasket 43 is not wholly disposed on one surface of the plate having solution injection port 45, but is partially disposed on both sides of the plate having solution injection port 45. Therefore, the Examiner's proposed combination fails to teach the Applicant's "insulating plate arranged on a second surface of the cap plate."

The Examiner further cited Osamu '130's injection hole 14 which has a step structure and asserted that the combination of Osamu '130 and Yoshimura '793 teaches

the Applicant's injection hole which has a stepped portion. The Applicant disagrees with the Examiner's assertion because Osamu '130 teaches away from the structure of the Applicant's injection hole.

Arguments against the Examiner's rejection to claim 1 is applied to the Examiner's rejection to claim 27.

In summary, the amended claim 27 is not tendered obvious by the Examiner proposed combination.

Claims 35 and 36

The arguments against the Examiner's rejection to claims 8 and 9 are respectively applied to claims 35 and 36.

VIII. Claims 19-21 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osamu et al., (JP 2000-208130) in view of Zupancic (US 4,592,970), Masumoto et al., (WO 2003/003485), and Yamahira et al., (US 2002/0012829) as applied to 1, 4-15, 23-24, 26-27 and 35-36 above, and further in view of Uba et al., (US 4,421,832).

The arguments against the Examiner's rejection to claims 4 through 6 are respectively applied to claims 19-21 and 31-33.

IX. Claims 22 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osamu et al., (JP 2000-208130) in view of Zupancic (US 4,592,970), Masumoto et al., (WO 2003/003485), Yamahira et al., (US 2002/0012829), and Uba (US 4,421,832) as applied to 1, 4-15, 23-24, 26-27 and 35-36 above, and further in view of Planchat, (US 4,735,630).

The arguments against the Examiner's rejection to claim 7 are respectively applied to claims 22 and 34.

X. Claims 25 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Osamu et al., (JP 2000-208130) in view of Zupancic (US 4,592,970), Masumoto et al., (WO 2003/003485), Yamahira et al., (US 2002/0012829), Uba (US 4,421,832) and Planchat (US 4,735,630) as applied to 1, 4-15, 19-24, 26-27 and 31-36 above, and further in view of Watari, (JP 2001-313022).

The arguments against the Examiner's rejection to claim 10 are respectively applied to claims 25 and 37.

In view of the foregoing amendments and remarks, all claims are deemed to be allowable and this application is believed to be in condition to be passed to issue. If there are any questions, the examiner is asked to contact the applicant's attorney.

No fee is incurred by this Amendment.

Respectfully submitted,

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